

Remarks/Arguments

Please reconsider the application in view of the above amendments and the following remarks.

Disposition of Claims

Claims 1-21 have been canceled without prejudice and are being pursued in a divisional application. Claims 22-33 are rejected. Claims 22, 26 and 27 are amended. Claims 22-33 remain pending in the present application.

Objections

The title of the invention is objected to as not descriptive. In accordance with the examiner's recommendation, applicant has amended the title to read --Method of Making a Thin Film Keypad--consistent with the elected invention.

Rejections under 35 U.S.C. §112

Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as indefinite because "said retainer sheet" lacks antecedent basis. Applicant has amended claim 26 to be dependent from claim 23, which introduces "a retainer sheet." Because "said retainer sheet" has antecedent basis in claim 23, applicant requests that this rejection be withdrawn.

Rejections under 35 U.S.C. §102

Claims 22, 24, 25, 29, 30, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,395,817 to Asada et al. (the '817 patent). Applicant respectfully traverses.

The '817 patent discloses a method of making keyboard switches. This method uses a plastic sheet 11c having bond layers 11b, 11d, and keys 11a are "bonded on the upper surface of the plastic sheet 11c by means of the upper bond layer 11b." See '817 patent, col. 2, lines 29-35. The '817 patent fails to disclose the step of injecting a molding material "such that said keycap is mechanically secured to said thin film material," as recited in independent claims 22 and 29. The keys 11a disclosed in the '817

patent are bonded to the sheet 11c, instead of being mechanically secured. For this reason, the '817 patent does not identically disclose the method recited in independent claims 22 and 30.

With respect to independent claim 22, the '817 patent also does not disclose molding material flowing around portions of a thin film material, as recited in claim 22. The '817 patent discloses a thermoplastic material injected through holes 11g and onto the bonding layer 11b on one side of the sheet 11c. See '817 patent, col. 3, lines 7-14. The thermoplastic material flows through the holes 11g but never flows around portions of the sheet 11c, i.e., such that the material is on both sides of the sheet. To provide further clarification, independent claim 22 has been amended to recite “wherein said molding material flows around portions of said thin film material and hardens on opposite sides of said portions of said thin film material to form at least two anchor portions.” The anchor portions can be keycap anchor portions 30 or retainer anchor portions 32 as shown in FIG. 2 and described on page 8 of the present application.

With respect to independent claim 29, the '817 patent also does not disclose the step of placing the thin film material into a molding tool such that holes are located between respective keycap mold cavities and anchor mold cavities and such that material passage regions are located within respective mold cavities, as recited in claim 29. The '817 patent discloses a through-hole 11g that also acts as a material passage region. The through-hole 11g disclosed in the '817 patent is positioned between the gate 102b and the cavity 101a. See '817 patent, col. 3, lines 1-3, and FIG. 5. The '817 patent fails to disclose an anchor cavity on the other side of the hole 11g into which a molding material can flow to mechanically secure the keycap onto the thin film material.

Because the '817 patent does not identically disclose the methods recited in independent claims 22 and 29, applicant submits that independent claims 22 and 29, and all claims dependent therefrom, are not anticipated by the '817 patent. Accordingly, applicant requests that the rejection under 35 U.S.C. 102(b) be withdrawn.

Rejections under 35 U.S.C. §103

Claims 23, 26 and 33 are rejected under 35 U.S.C. 103 as being unpatentable over the '817 patent in view of U.S. Patent No. 6,660,200 to Nakajo (the '200 patent). Claims

27-28 and 31 are rejected under 35 U.S.C. 103 as being unpatentable over the '817 patent in view of U.S. Patent No. 5,894,006 to Herbst (the '006 patent). Applicant respectfully traverses these rejections.

With respect to dependent claims 23 and 26-28, applicant submits that the Office action fails to establish a *prima facie* case of obviousness. As stated above, the '817 patent does not disclose the step of injecting a molding material that flows around portions of the thin film material and hardens on opposite sides of the portions of thin film material to form at least two anchor portions, as recited in independent claim 22. The teaching references (i.e., the '200 patent and the '006 patent) also do not teach or suggest this step. At best, the '200 patent discloses only a single anchor portion 5, which does not, by itself, provide rotational stability to the key. The '006 patent does not disclose any anchor portions. In particular, the material that flows around the tongue 77 in the '006 patent does not harden on opposite sides of the tongue 77 to form an anchor portion, as recited in amended dependent claim 27. Thus, even if the patents are combined in the manner suggested in the office action, the combination does not teach or suggest all of the claimed limitations and claims 23 and 26-28 are not *prima facie* obvious. See MPEP 2143.

With respect to dependent claims 31 and 33, applicant submits that the Office action fails to establish a *prima facie* case of obviousness. As stated above, the '817 patent does not disclose the step of forming keycap attachment regions including both at least one hole and at least one material passage region, as recited in independent claim 29. The teaching references (i.e., the '200 patent and the '006 patent) also do not teach or suggest this step. The '200 patent discloses only a single hole through the sheet 1 and does not disclose a separate material passage region because the material passes through the single hole. The '006 patent discloses only a material passage region covered by the tongue 77 and does not disclose a separate hole that allows molding material to flow into an anchor cavity. Thus, even if the patents are combined in the manner suggested in the office action, the combination does not teach or suggest all of the claimed limitations and claims 31 and 33 are not *prima facie* obvious. See MPEP 2143.

Conclusion

The claims have been shown to be allowable over the prior art. Applicant believes that this paper is responsive to each and every ground of rejection cited by the Examiner in the Action dated December 23, 2003, and respectfully requests favorable action in this application. The examiner is invited to telephone the undersigned, applicant's attorney of record, to facilitate advancement of the present application.

Please apply any charges not covered, or any credits, to Deposit Account 50-2121 (Reference Number MNRES-001XX).

Respectfully submitted,

GROSSMAN, TUCKER, PERREAULT &
PFLEGER PLLC

Date: February 25, 2004

By: 
Kevin J. Carroll, Reg. No. 36,384

55 South Commercial Street
Manchester, NH 03101
Telephone: (603) 668-6560
Facsimile: (603) 668-2970